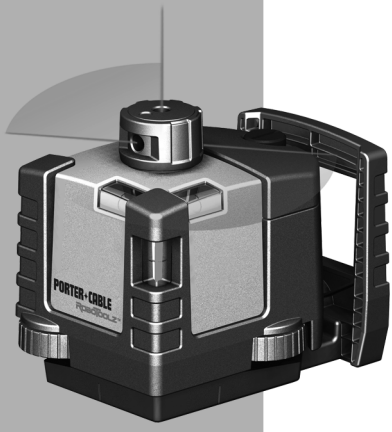
ENGLISH

User Guide

Rotating Laser System 2-Beam, Level, Plumb & Square Laser



MODEL RT-3620-2

MODEL RT-3620-2K
(Includes Detector)

1. User Safety

The RT-3620-2, 2-beam, level, plumb and square rotational laser tool is a Class IIIA laser product. Observe the following precautions when using the RT-3620-2:

- Always operate the laser tool according to the procedures in this user guide.
- Avoid direct eye exposure to the laser beam.
- Do not point the laser beam at your face or body, or another person's face or body.
- Do not point the laser beam at reflective surfaces.
- To avoid accidental laser exposure, turn off power to the laser tool before moving it.
- Ensure the laser is turned off before looking into the laser aperture.
- Do not disassemble or attempt to service the laser tool. Only qualified service personnel should repair or service the laser tool.

The RT-3620-2 laser tool contains a semiconductor laser diode with a wavelength of 635 nanometers. The continuous output of the beam is less than 5.0 milliwatts. The RT-3620-2 laser tool complies with US FDA performance standards, 21CFR, Subchapter J.

Warning Labels
The following labels are attached to every RT-3620-2. They should not be removed or defaced.

This label is located on the side of the unit. It identifies the RT-3620-2 laser tool as a devices that emits laser radiation and require appropriate user safety precautions.

This label is located on the dot/line dither positioning knob. It indicates that laser radiation emits from the aperture.

2. Overview

The RT-3620-2 is a 2-beam, level, plumb and square rotational laser tool. The laser detector (RT-A1655 - included with RT-3620-2K) allows for laser beam detection under lighting conditions where beam visibility is poor.

This guide describes the features and operation of the RT-3620-2 laser tool and optional Laser Detector (RT-A1655 - included with RT-3620-2K).

3. Features

The RT-3620-2 laser tool includes the following:

Laser Tool
- Rotating and squaring beams for level or plumb applications
- Leveling range - ± 5.5˚
- Manual plumb leveling
- Accuracy
  - Level - ± 1/4" (6.4mm) @ 100' (30m)
  - Plumb - ± 1/4" (6.4mm) @ 100' (30m)

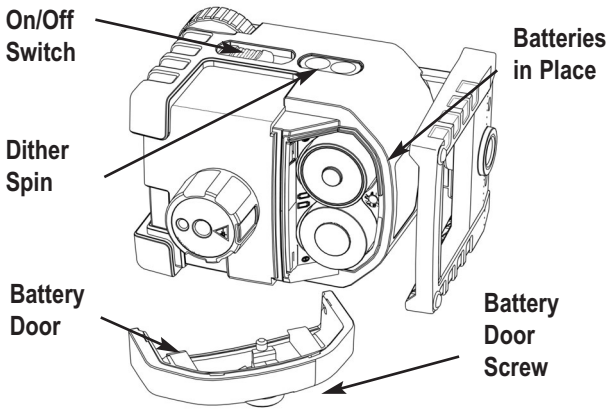
- Spin mode (level or plumb)
  - Variable rotation speeds - slow, medium and fast
- Dot/Line Dither/Scan mode (level or plumb), for higher beam visibility
  - Dot and two line lengths
- Built-in tripod mount - 5/8" x 11 for standard surveyor's tripods, such as the RoboToolz RT-A1150 tripod

Accessories
- Reflective laser target

Laser Detector (RT-A1655)
- Range - 600' (diameter)
- Laser beam locator, with fine/coarse resolution selector; beeper on/off
- Low batter indicator

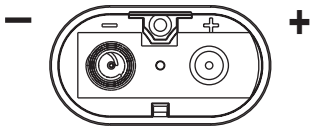
4. Components

The following diagram illustrates the main components of the RT-3620-2 laser tool.

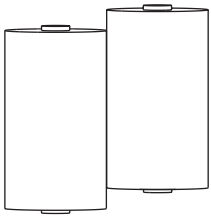


5. Batteries

The following diagram illustrates battery installation into the RT-3620-2.



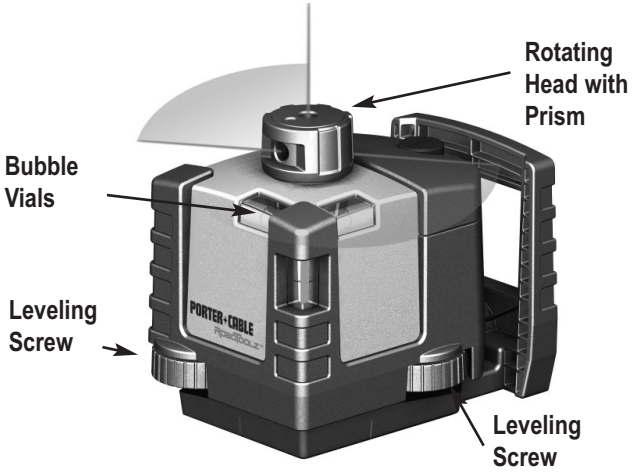
Installing/Replacing the Batteries



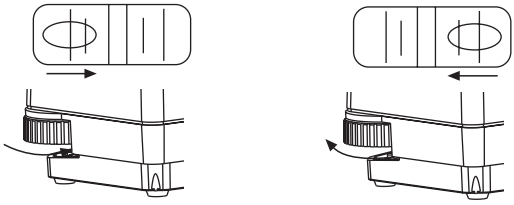
Requires 2 "D" Batteries

6. Operation

This section describes the RT-3620-2 laser tool and it's operating modes.



Leveling the RT-3620-2 laser tool using leveling wheels and bubble vials.



7. Calibration

Although the RT-3620-2 laser tool is calibrated to specification before leaving the factory, the tools contain many precision-machined parts that may be affected if a unit is subject to abuse. Therefore, if a unit is dropped or sustains significant impact, check its calibration. It is also recommended that the unit be periodically calibrated, as a normal maintenance procedure.

To calibrate the RT-3620-2 laser tool:

1. Select a proper location where a target (light colored surface) can be set up at a distance of 50 feet (15 meters). Lower light conditions (brightness) may be helpful in clearly marking the target.

2. Secure the unit to a level and stable tripod.

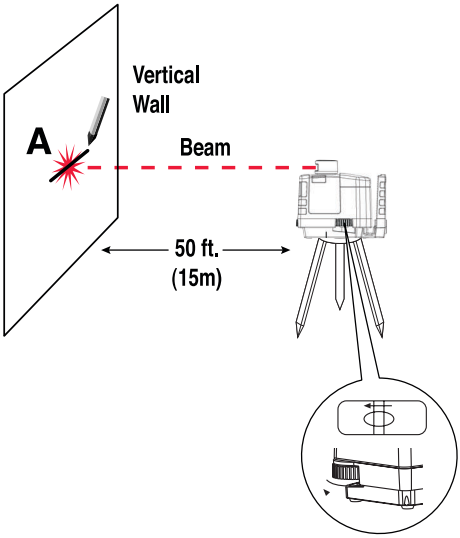
3. Position the unit so that the front of the instrument is perpendicular to the target.

4. Using the leveling wheels, center both horizontal vials, paying particular attention to the vial perpendicular with your target.

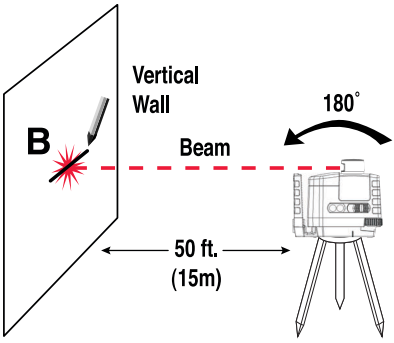
Note: Allow 5-10 seconds for the bubble to settle before reading the bubble vial and adjust as needed.

5. Without disturbing the laser unit, point the beam to the target until the beam hits your target (vertical surface).

6. Walk to the target and mark the height of the beam, record as "A".



7. Return to the unit and rotate it 180 degrees without disturbing its platform.

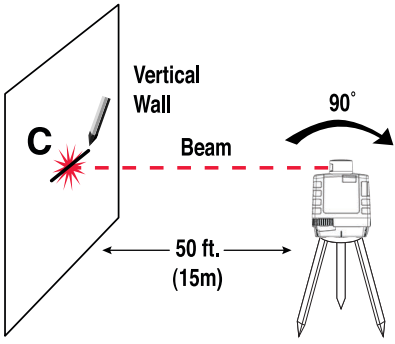


8. Repeat Step #4.

9. Repeat Step #5.

10. Walk to the target and mark the height of the beam. Record as "B".

11. Return to the unit and rotate it 90 degrees on its platform.

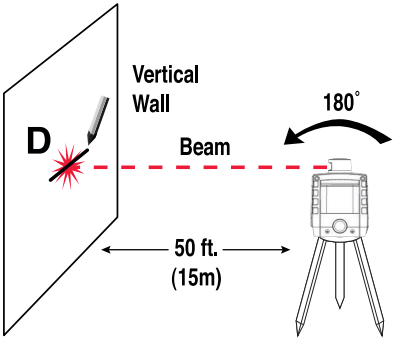


12. Repeat Step #4.

13. Repeat Step #5.

14. Walk to the target and mark the height of the beam. Record as "C".

15. Return to the unit and rotate it 180 degrees on its platform.



16. Repeat Step #4.

17. Repeat Step #5.

18. Walk to the target and mark the height of the beam. Record as "D".

Calibration error calculation =

Vial #1 = (Distance between "A" and "B")/2

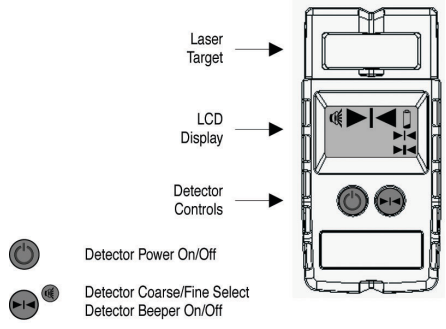
Vial #2 = (Distance between "C" and "D")/2

✍ ***Note:*** Calibration error should not exceed 1/4" (6.4mm) @ 100' (30m). If the unit does exceed 1/4" (6.4mm) @ 100' (30m) please call Toolz Customer Service at 650-903-4944 or 800-984-0404 extension #2.

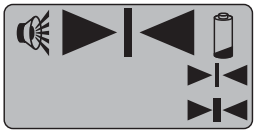
8. Laser Detector RT-A1655
(Included with RT-3620-2K)

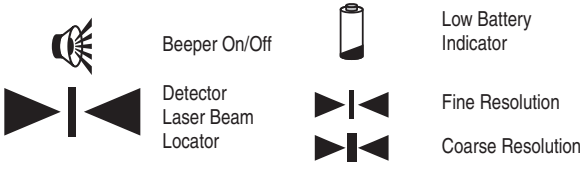
The RT-3620-2 laser tool can be used with any standard laser detector. However, the laser detector that responds best to the RT-3620-2 is the RT-A1655 detector. The laser detector allows accurate laser beam detection outdoors, or under other conditions when the beam is difficult to see.

The following diagram illustrates the RT-A1655 laser detector controls.



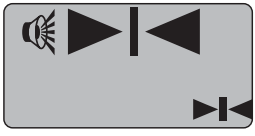
The following diagram illustrates the RT-A1655 laser detector LCD display icons.





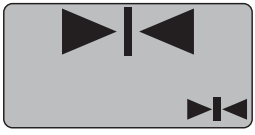
To use the RT-A1655 laser detector:

1. Activate the laser detector by pressing its keypad Detector Power On/Off button . The laser detector emits a single beep, and icons appear in the LCD display, confirming that the laser detector is turned on. At start up, the detector resolution is coarse and the beeper is on , as indicated by the LCD display icons.

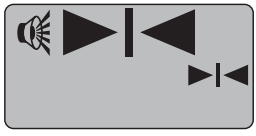


Coarse resolution, Beeper on (default)

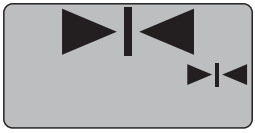
2. Press the Detector Course/Fine Select button to cycle through the available options:



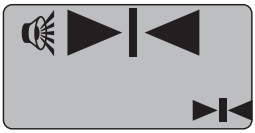
a. Coarse resolution, Beeper off



b. Fine resolution, Beeper on



c. Fine resolution, Beeper off

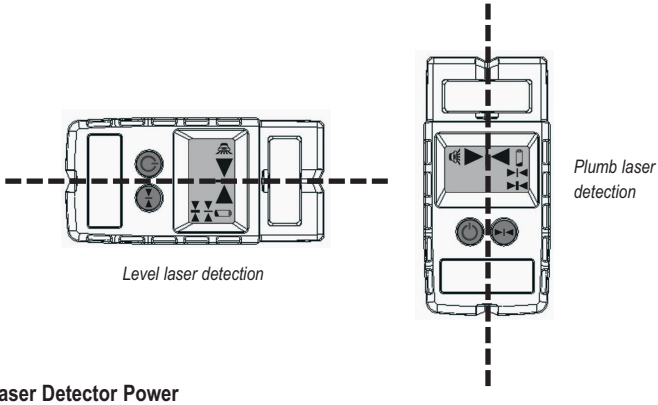


d. Coarse resolution, Beeper on (back to default)

3. Locate the laser beam, using the red detector panel on the laser detector. As the laser beam is approached, a single arrow points in the beam's direction. The laser tool emits sounds to aid in locating the laser beam:
   - Rapid beep — Indicates that the laser detector is pointed too high or far to the left or right.
   - Continuous tone — Indicates that the laser detector is pointed directly toward the laser beam.
   - Slow beep — Indicates that the laser detector is pointed too low, or off-center in the opposite direction.
4. Center the beam by moving the laser detector in the direction of the arrow. When the beam is aligned with the center of the detector panel, both arrows on the LCD display are lit and the beep is continuous, indicating that the detector is properly centered.

✍ ***Note:*** *Laser detector orientation depends on whether the detector is being used to locate the laser beam in the level or plumb plane.*

5. Press the Detector Power On/Off button ⏻ to turn off the detector.



Laser Detector Power

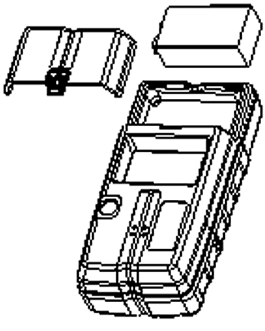
A 9V battery (alkaline or non-alkaline) powers the RT-A1655 laser detector.

Low Battery Indicator

The Low Battery Indicator icon appears on the laser detector LCD display when 25 percent of battery life remains (approximately four hours). The icon continues to appear until the battery is replaced or fails.

Battery Replacement

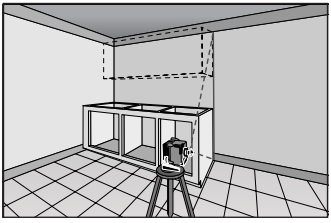
The laser detector battery compartment is located at the back of the unit. Open the compartment and replace the 9V battery, ensuring that the polarity is correct, as shown in the diagram.



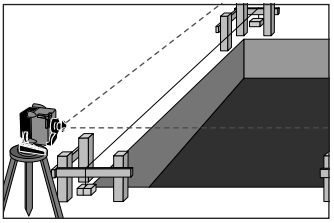
❖ ***Caution:***

1. *ALWAYS turn off the laser detector before removing and replacing the battery.*
2. *Remove the 9V battery from the laser detector whenever the detector is stored for an extended period of time.*

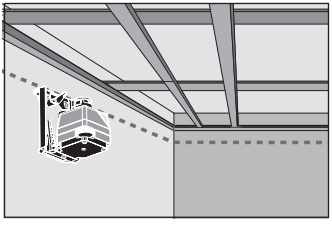
9. Applications



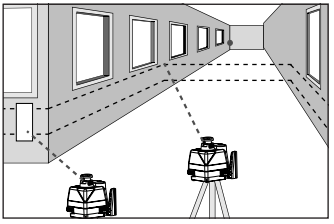
Level (Carpentry)



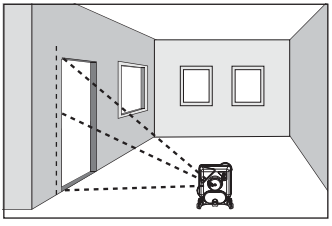
Square (Concrete)



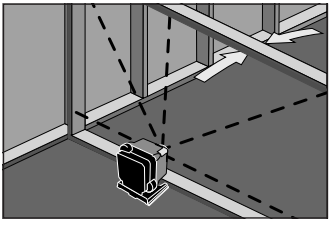
Level (Drop Ceiling)



Level (Framing)



Plumb (Carpentry)



Plumb (Framing)

10. Specifications (RT-3620-2, RT-3620-2K)

Laser Tool

Accuracy	
Level:	±1/4 in. (6.4 mm) at 100 ft. (30m)
Plumb:	±1/4 in. (6.4 mm) at 100 ft. (30m)
Operating modes	
Spin:	Three speeds — slow, medium and fast
Dot/Line Dither/Scan:	Dot and two line lengths
Level or plumb positioning (Dot/Line Dither/ Scan mode):	Manual, 360°
Power supply:	Two "D" batteries (alkaline or non-alkaline)
Laser output:	635 nm, 5 mW maximum
Laser classification:	Class IIIA
Environmental:	Dirt-, dust- and water-resistant
Temperature range (RT-3620-2, RT-3620-2K):	
Operating:	14°F (-10°C) to 112°F (44°C), with automatic laser shutoff at 113°F (45°C)
Storage:	-4°F (-20°C) to 158°F (70°C)
Tripod mount:	5/8" x 11
Dimensions:	6 in. x 4 in. x 5.5 in. (15.25 cm x 10 cm x 14 cm)

Laser Detector RT-A1655 (Included with RT-3620-2K)

Laser detector range:	600 ft. (diameter)
Power supply:	9V battery (alkaline or rechargeable)
Low battery indicator:	LCD display icon (approximately four hours remaining)

11. Care and Maintenance

This laser tool is a product of superior design and manufacture, and should be treated with care. The following guidelines will help maintain the product and fulfill warranty obligations:

- Keep the laser tool, including parts and accessories, out of the reach of small children.
- Do not store in dusty or dirty areas. Although the laser tool and laser detector are dust- and dirt-resistant, long-term exposure to these elements may damage internal moving parts.
- Keep dry. The laser tool and laser detector are water-resistant; however, precipitation, humidity, and liquids that contain minerals that corrode electrical circuits may enter the units. Do not attempt to dry the units by means of fire or with an electrical dryer.
- Do not store in hot areas above 158°F (70°C). High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store in cold areas below -4°F (-20°C). When the laser tool and/or laser detector warms to normal operating temperature, moisture can form inside the units and damage the circuit boards.
- To avoid damage and personal harm, do not attempt to open the laser tool and/or laser detector. Only qualified service personnel should open the units.
- Do not drop, knock, or shake the laser tool and/or laser detector. Rough handling impacts calibration accuracy.
- Periodically calibrate the laser tool to ensure calibration accuracy. (Refer to the Calibration procedure for instructions.)
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the laser tool and/or laser detector. Wipe with a soft cloth, slightly dampened in a mild soap-and-water solution.
- For storage, turn off the laser tool and laser detector and remove the batteries.

12. Warranty Information

Toolz warrants for a period of one (1) calendar year from the date of purchase that its products are free of defect in material and workmanship, and conform to Toolz's published technical specifications under normal operating conditions.

This Warranty is void and does not apply if the product has been damaged by accident, abuse, misuse, normal wear and tear, or if the product has been modified, altered, or the case opened, or is repaired by anyone other than Toolz or its authorized repair center(s).

Toolz will, at its option and expense, repair or replace any products found to be defective under the above warranty. Repairs and replacement units may contain new and/or reconditioned components.

EXCEPT AS EXPRESSLY SET FORTH ABOVE, TOOLZ MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND TOOLZ EXPRESSLY DISCLAIMS ALL WARRANTIES NOT LISTED ABOVE. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary by jurisdiction.

TOOLZ SHALL IN NO EVENT BE LIABLE FOR ANY LOST PROFITS, LOST BUSINESS, COST OF REPLACEMENT GOODS, OR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, SPECIAL OR PUNITIVE DAMAGES, ARISING OUT OF OR RELATING IN ANY WAY TO THE PRODUCT OR USE OF OR INABILITY TO USE THE PRODUCT, WHETHER OR NOT BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHERWISE. TOOLZ'S MAXIMUM LIABILITY UNDER THIS WARRANTY SHALL NOT EXCEED THE PRICE PAID FOR THE GOODS UPON WHICH SUCH LIABILITY IS BASED. The foregoing limitations will apply even if any warranty or remedy provided under this Agreement fails of its essential purpose. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

13. Repair and Registration

Should you experience problems with the product that are not addressed by the user guide or the website please contact Customer Service.

If Customer Service concludes that the product must be returned for repair, a Return Material Authorization (RMA) number must be issued. Upon receipt of the RMA number, return the product to Toolz (address below). The product must be shipped in the original packing container or its equivalent. Include a copy of proof of date of purchase. Toolz is not responsible for damage due to improper packing.

Contact Toolz Customer Service via email at: customerservice@toolz-inc.com or via phone at 650-903-4944 or 800-984-0404 extension #2.

To register your laser, complete and mail the Warranty registration card or fax it to us at: 650-903-4724.

Toolz - 404 Villa Street, Mountain View, CA 94041 USA.

Visit our website at: www.robotoolz.com

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